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**Objective:** The Montreal Cognitive Assessment (MOCA) is widely used as a mental status screening test to detect cognitive impairment in adults over 55 years of age. Performance on this test ranges from 0 to 30. One point is given to individuals with 12 or lower years of education. This accommodation is based on the fact that low education may be a risk factor for dementia (Milani et al., 2018). However, studies suggest the one-point adjustment may not be sufficient to address the impact of low education on test performance (Malek-Ahmadi et al., 2015). The aim of this study is to compare the effects of educational achievement versus baseline verbal abilities on MOCA performance.

**Participants and Methods:** Fifty patients (25 male; mean age=72.78, SD = 8.11; mean education=16.18, SD = 2.73) with cognitive concerns were referred to Massachusetts General Brigham. All underwent neuropsychological evaluation, including screening with the MOCA. Total MOCA scores were calculated. In this patient group, the MOCA scores ranged from 10 to 29 (mean=22, SD=5.129). Measures of literacy (Wechsler Test of Adult Reading or Test of Premorbid Functioning) were used to estimate baseline verbal abilities. Educational achievement was based on self-reported years of education.

**Results:** Correlational analyses included the Total MOCA scores, measures of literacy, and years of education. Performance on the MOCA significantly correlated with measures of literacy,  $r(43)=.578$ ,  $p<.001$ , and a stepwise regression analysis revealed that literacy predicted performance on the MOCA,  $R^2=.041$ ,  $F(3,139)=9.172$ ,  $p<.001$ . Years of education correlated with measures of literacy,  $r(44)=.494$ ,  $p<.001$ , but not with performance on the MOCA.

**Conclusions:** Findings suggest that education-adjusted scoring on the MOCA may not be sufficient to "level the playing field" in terms of MOCA performance. Years of education had less of an effect on the Total MOCA scores than did baseline verbal abilities. It may be the case that literacy has a more robust effect on MOCA performance due to the inherent verbal nature of the MOCA. Data from this study highlight the importance of considering a patient's baseline

verbal abilities in the interpretation of their MOCA performance.

**Categories:**

Assessment/Psychometrics/Methods (Adult)

**Keyword 1:** verbal abilities

**Keyword 2:** cognitive screening

**Keyword 3:** academic achievement

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## 52 Demographic influences on test performance may not be universal: considerations from a cross-country comparison of South Africa and Zimbabwe

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**Objective:** Appropriate adjustments to normative data for neuropsychological (NP) tests are imperative for their equitable use in brain health practices. Age and education are known to be strong predictors of test performance. In settings where validated tests are not available, common practice has been to adapt and apply them in similar fashion as settings where they were developed. However, demographic adjustments cannot be assumed de facto to be universal in their strength and domain associations. For example, South Africa (SA) and Zimbabwe are neighboring countries with some similarities in their demographic makeup, but with vastly different sociopolitical trajectories—Zimbabwe was colonially occupied until 1980 and SA was oppressed under Apartheid until 1994- which have impacted access to and quality of education by severely limiting educational opportunities for native citizens. The present study explored whether the direction and strength of relationships between age and education on NP test performance were similar or not between SA and Zimbabwe adults living with and without HIV.

**Participants and Methods:** Data was extracted from two IRB-approved studies in SA and Zimbabwe with similar inclusion and exclusion criteria. The SA sample (n=214) was comprised of 56% females, 48% HIV-positive adults, mean age of 34 years, and a nine-year range in education (3-14 years). The Zimbabwe sample (n=212) was comprised of 68% females, 67% HIV-positive adults, mean age of 36 years, and a thirteen-year range in education (7-20 years). Participants completed NeuroScreen, a tablet-based battery of 12 brief NP tests adapted for indigenous SA and Zimbabwe languages. The two study samples were analyzed separately. Zero order correlations between each of the tests and age and gender were conducted to determine the influence of the demographic variables. Relationships with moderate correlations ( $r > 0.3$ ) in both samples were further analyzed using univariate ANOVA to examine the main effects and interactions of age and education

**Results:** Overall, there was a similar pattern of results across samples, with nine tests showing no-to-low associative relationships with age and education respectively. Moderate, significant relationships were found between age, education and three tests of processing speed (Visual Discrimination A, Visual discrimination B, and Number Speed) in both samples. Age and education had different effects on Visual discrimination A across samples with a significant main effect for age but not education in SA [ $F(40,83)=3.060$ ,  $p < 0.01$ ], whilst Zimbabwe had a significant main effect for education but not age [ $F(10,87)=4.541$ ,  $p < 0.01$ ]. Visual Discrimination B and Number Speed showed significant main effects for both variables in both samples. However, there was a significant interaction for both tests in Zimbabwe only.

**Conclusions:** The current study is novel in its exploration of country-specific relationships between NP test performance and demographic factors in settings where assessment science is emergent. Results demonstrate the presence of differential relationships between demographic variables on test performance which raises questions about the source of these differences. One important potential source is the socio-cultural context of each country and the intersection of demographic factors in these contexts. Further research is required to explore these considerations.

### Categories:

Assessment/Psychometrics/Methods (Adult)

**Keyword 1:** assessment

**Keyword 2:** cross-cultural issues

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## 53 Are Boys (names) Really Just Like Animals? Comparing Multi-Category Fluency Trials from the D-KEFS in Predicting Temporal Cortical Thickness in an Outpatient Memory Disorders Population

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**Objective:** Semantic fluency measures comprise a differing number of trials depending on the test battery and/or normative data used. Using semantic fluency trials from the Delis Kaplan Executive Function System (D-KEFS; Animals and Boys' names), we sought to examine whether: 1) there was incremental benefit of multiple trials in associations with aggregated temporal cortical thickness and 2) patterns of neuroanatomical associations with specific temporal lobe structures differed between Animals and Boys' names trials.

**Participants and Methods:** Archival records of adults who completed a neuropsychological evaluation which included the semantic fluency measures of interest and had undergone structural MRI were identified (n=243,  $M_{age}=72.35$  years,  $SD_{age}=6.74$ , Female=46.9%). Cortical thickness values were obtained using FreeSurfer and averaged across sub-regions, separately for the left and right temporal lobe, per recommendations from the FreeSurfer group. Multiple linear regression models were fit to examine separate and incremental contribution of both Animals and Boys' names, on temporal lobe thickness, including age, sex, and education in the models. Zero order correlations with each of the temporal cortical thickness areas (inferior, middle, and superior temporal; banks of the superior temporal sulcus, fusiform, transverse temporal, entorhinal, temporal pole, and parahippocampal cortices)